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# SCIENCE

# 10



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# Welcome to Addison Wesley Science 10

*You are about to begin a scientific exploration using Addison Wesley Science 10. To assist you in this journey, this book has been designed with the following features.*

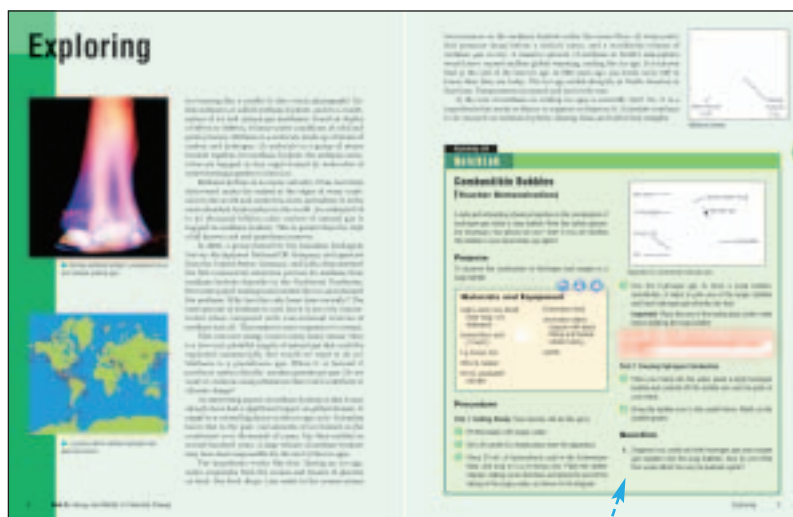
An Outline gives you an overview of what you will be learning. You may want to use this as a guide to help you study.

## Unit Outline

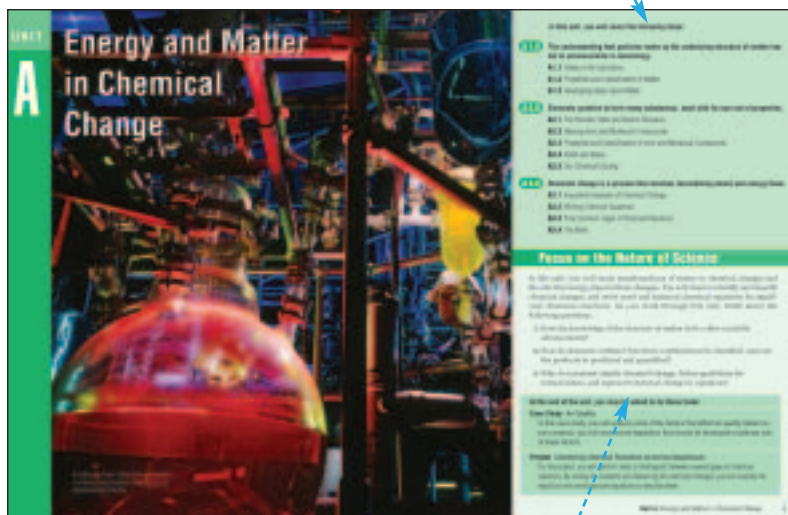
This book is divided into four units. Each unit opens with a large photograph that captures one of the ideas that will be covered in the unit.

## Exploring

This section is an introduction. It has an interesting real-world example to introduce the unit.



The **QuickLab** is a short, informal hands-on activity that is designed to introduce one of the topics of study in the unit.



The **Focus** section has several questions to help you think about what you learn as you work through the unit. The questions focus on one of three areas or emphases of science: the nature of science, the relationship between science and technology, and the relationship of science and technology to society and the environment.

## The Sections

Each section title summarizes what you will learn in this section. These titles can help you organize your thoughts when you study.

The **Key Concepts** are the main ideas you will learn in this section. By the end of the section, you should be able to describe or explain each concept.

The **Learning Outcomes** are what you should know and be able to demonstrate your understanding of on completing the section.

## The Lesson

The text is further divided into lessons to make the ideas easier to follow.



An **infoBIT** is an interesting fact relevant to the content of the text.

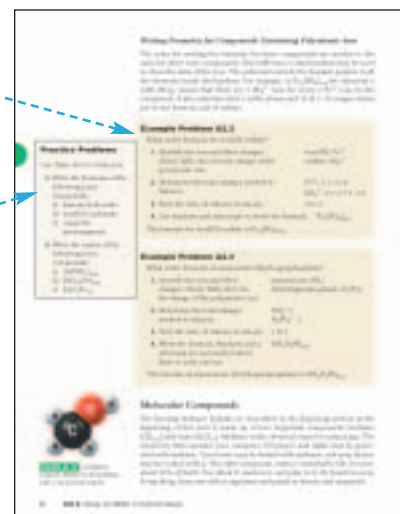


You can further explore and study a topic in **reSEARCH** using the Internet. This may provide an additional way to study the idea of the section or for enrichment.



**Example Problems** show the detailed steps in solving problems.

**Practice Problems** model the example problem and provide opportunities for further practice. Use these problems to check if you understand the concept being discussed. If you have trouble with a practice problem, you should ask for help before continuing.



Photos and labelled diagrams help explain or clarify many of the ideas in the unit.

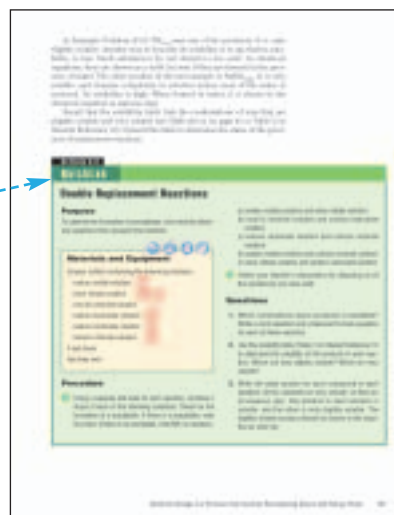




**Minds On...** activities are designed to stimulate thinking about key aspects of the topic being studied. These activities are usually done in small groups or sometimes by yourself.

A **Skill Practice** reviews or reinforces certain skills necessary for completing some of the lab activities in this course.

Throughout the book **QuickLabs** help explore specific topics or concepts in a hands-on manner. QuickLabs tend to take less time than the formal labs and do not require the same level of analysis and interpretation. In some situations, your teacher may demonstrate the activity.



**Check and Reflect** questions allow you to review what you have learned in a lesson and consolidate your understanding.



The **Section Review** provides questions relevant to the whole section. Answering these questions will help you consolidate what you have learned in the various lessons in the section.

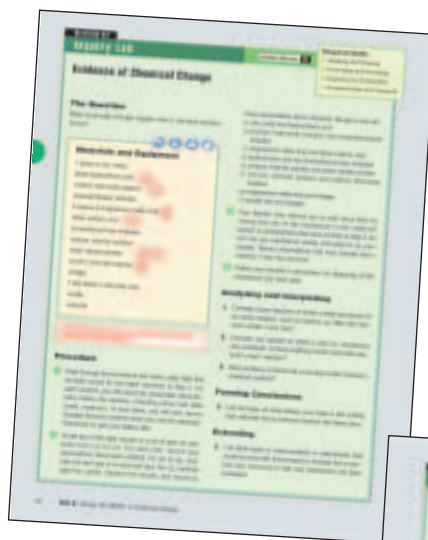


# The Lab Activities

There are four main types of lab activities.

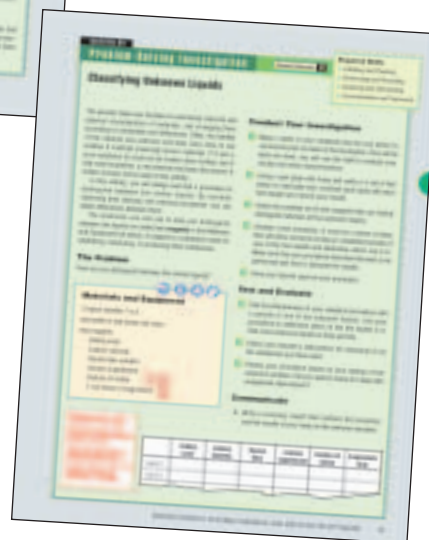
## Inquiry Lab

These activities provide opportunities for you to work in a lab setting. You will develop scientific skills of predicting, observing, measuring, recording, inferring, analyzing, and much more. In these activities, you investigate many different phenomena that occur in our world.



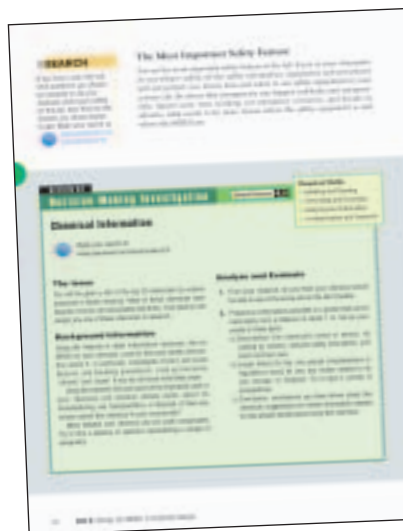
## Problem-Solving Investigation

These are open-ended activities that allow you to be creative. You will identify a problem, make a plan, and then construct a solution. These activities usually have more than one solution.



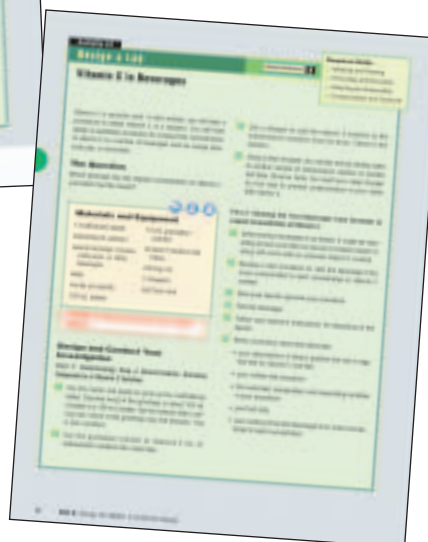
## Decision-Making Investigation

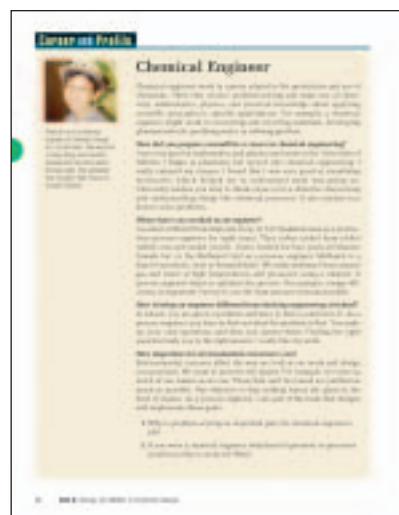
These activities present issues or questions related to everyday life. You will analyze the issue and develop a conclusion based on the evidence you collect. Be prepared to present your conclusion to your classmates.



## Design a Lab

For this type of lab you are given some criteria that define what a successful result would look like. You then plan an experiment, write the procedure, and perform it. You analyze your data and draw your own conclusions.





## Career and Profile

Here you will find interesting profiles or interviews with people whose careers are related to the science and technology you study in the unit.

## The Culminating Tasks



## Project

This provides a hands-on opportunity for you to demonstrate what you have learned. The project requires you to apply some of the skills and knowledge that you have acquired to a new situation.

## Case Study

This features an issue that may involve several viewpoints or have more than one solution. Here is an opportunity for you to use the different ideas you have learned from the unit or collected from other sources to form your own opinion.

## Unit Summary

At a glance, you can find out all the key concepts you have learned within the unit. You can also read the summary of ideas in each section of the unit. This page can help you organize your notes for studying.

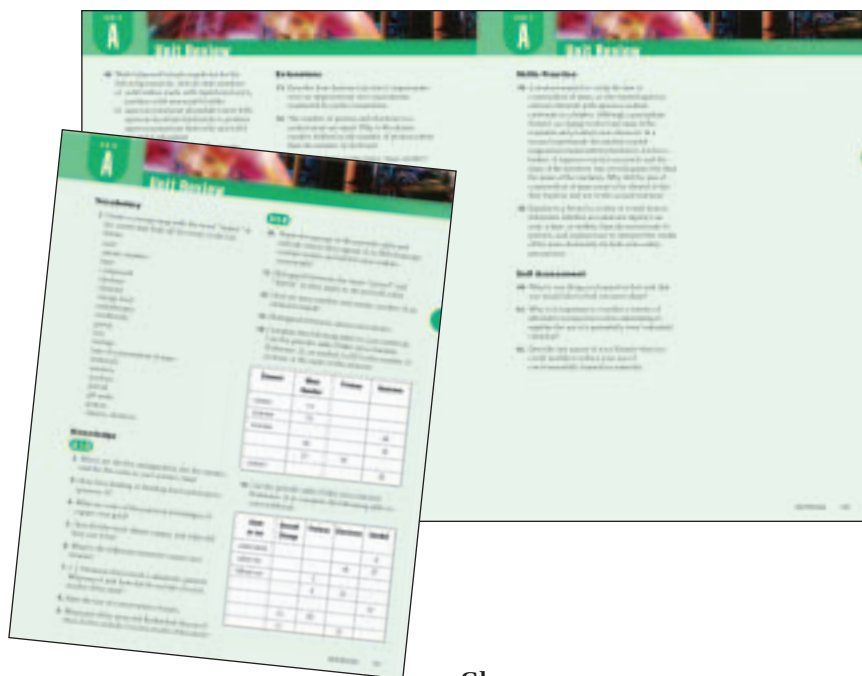




## Unit Review

The Unit Review presents different categories of questions:

- **Vocabulary**—a chance to demonstrate your understanding of the important terms in the unit
- **Knowledge**—questions to test your basic understanding of the key concepts in each section of the unit
- **Applications**—questions that require you to use the ideas in more than one section in the unit
- **Extensions**—questions that have you apply your learning beyond what you have studied in the unit
- **Skills Practice**—questions that are related to specific skills you have learned in the unit
- **Self Assessment**—opportunities to express your thoughts about ideas you have discovered in the unit

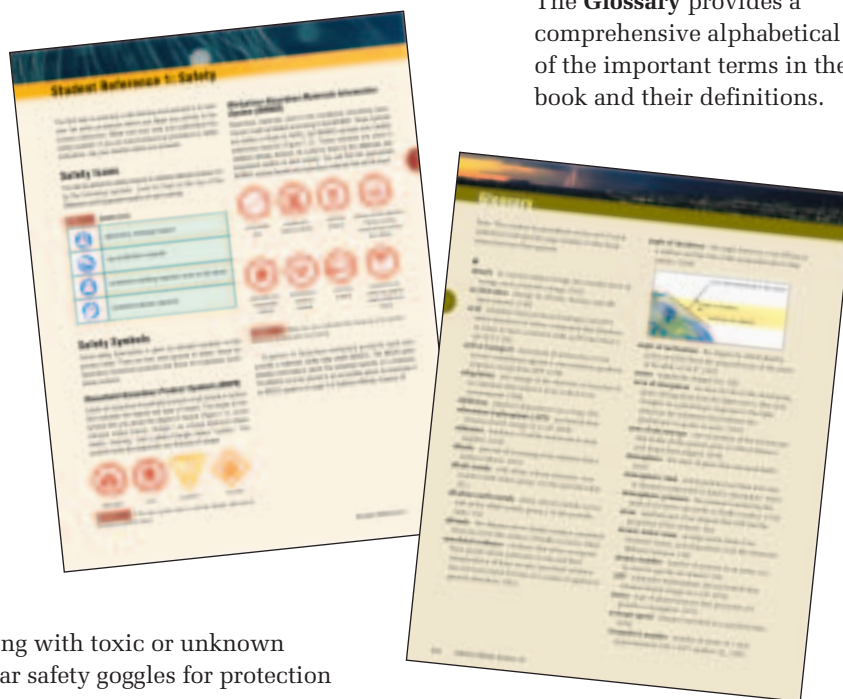


## Glossary

The **Glossary** provides a comprehensive alphabetical list of the important terms in the book and their definitions.

## Student Reference

These pages provide references to lab safety and other basic scientific skills that will help you as you do the activities. Refer to these pages when you need a reminder about some of those skills.



## Icons



means you will be working with toxic or unknown materials and should wear safety goggles for protection or as a precaution



means you should wear a lab apron to protect clothing



means you should wear rubber gloves for protection when handling the materials



means you will be working with glassware and you should exercise caution to avoid breakage and possible injury



means opportunities exist for research on the Internet

*Now it's time to begin. We hope you will enjoy your scientific exploration using Addison Wesley Science 10!*